



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

August 18, 1999

MEMORANDUM

SUBJECT: Methamidophos. List B Reregistration Case No. 0043/Chemical ID No.101201. Response to Comments to the Draft Methamidophos HED Risk Assessment and Disciplinary Chapters for the Reregistration Eligibility Decision (RED) Document. DP Barcode D254708. No MRID No.

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The comments discussed below were submitted in response to the HED preliminary Risk Assessment and Disciplinary Chapters for the Reregistration Eligibility Decision (RED) Document. Comments were received by HED from the registrant, Bayer Corporation; the California Department of Pesticide Regulation, and the National Potato Council. These comments address only those pertaining to dietary risk. Comments pertaining to occupational exposure or toxicology will be addressed in the revised Occupational Exposure and Toxicology RED chapters, respectively.

Bayer Comment

Exposures: dietary - To this date, only Tier 1 and 2 preliminary assessments of dietary risk have been conducted. Concurrent with this submission, BAYER is submitting Tier 3 Monte Carlo type analysis for the acute (BAYER Report #108767) exposure to methamidophos and a Tier 3 chronic analysis of chronic (BAYER Report #108766) exposure. These analyses have been conducted assuming all currently supported uses of both MONITOR™ (methamidophos) and ORTHENE™ (acephate). These assessments show that dietary exposure to the currently labeled uses of methamidophos and acephate give acceptable margins of safety.

HED Response

HED will review the submitted probabilistic assessment and the results will be presented in the dietary exposure assessment memorandum.

National Potato Council (NPC) Comments

NPC submitted comments which addressed the safety and benefits associated with the use of methamidophos. Allan Felsot of NPC also commented on the assumptions made in the dietary risk assessment. He stated that the aggregated acute dietary risk is exaggerated by overlooking comparatively recent toxicological mechanistic data concerning the antagonistic interactions of acephate and methamidophos.

HED Response

In aggregating the risk from methamidophos, HED is not considering simultaneous exposure to acephate and methamidophos but rather the residues are representative of actual methamidophos residues that may be found as a result of application of acephate or methamidophos. The anticipated residues of methamidophos from application of acephate are representative of actual methamidophos residues found when acephate was applied. Mechanistic data concerning the antagonistic interactions of pesticides will be addressed when a cumulative assessment is conducted for all organophosphate pesticides.

The California Department of Pesticide Regulation (DPR) Comments

I think that it is an excellent idea to evaluate aggregate exposure by considering acephate as well as methamidophos, since the former is bioactivated by de-acetylation to the latter. Parent acephate is inactive against ChE. However, I question whether residues of parent-only are adequate for methamidophos and wonder if degradates are being considered for inclusion in the

tolerance expression (for methamidophos and acephate). Recent literature reports from John Casida's laboratory suggest that degradates/metabolites of methamidophos may play a role in onset of clinical signs/death. Casida has pointed out that methamidophos itself is not especially potent in vitro as a ChE inhibitor and suggests that metabolites (such as the hydroxylamine of methamidophos) may contribute to the overall toxicity.

HED Response

HED looks at metabolism studies conducted using a minimum of three diverse crops and determines the residues to be regulated. Based on metabolism studies conducted on beans, cotton, and lettuce, and significantly lower concentrations of metabolites, HED has determined that the residue to be regulated is methamidophos *per se*. If evidence becomes available supporting inclusion of additional residues of concern, HED will reassess the situation.